

CLAIMS:

1. A method for determining the non-spermine/spermidine activity of spermine/spermidine N¹-acetyltransferase (SSAT) in a mammal comprising the step of assaying a sample ^{or} derived from the mammal for the level of an acetylated form of a non-spermine/spermidine SSAT substrate in the sample.
2. A method as in claim 1 wherein the SSAT substrate is amantadine and the acetylated form of an SSAT substrate is acetylamantadine.
3. A method as in claim 1 wherein prior to the step of assaying for the level of an acetylated form of the SSAT substrate, the SSAT substrate is incubated with a mammal, mammalian tissue or mammalian cells at a specific SSAT substrate dosage level.
4. A method as in claim 3 wherein the SSAT substrate dosage is equivalent to 1-4 mg/kg.
5. A method as in claim 3 wherein the SSAT substrate is incubated a mammal and the sample is a blood or urine sample. (Dr. Sitar pointed out the fact that acetylamantadine is also detectable in blood by same methods, should we specifically claim?)
6. A method as in claim 5 wherein the urine sample is collected 2-24 hours after SSAT—substrate incubation with the mammal.
7. A method as in claim 5 wherein the urine sample is collected 8 hours after SSAT substrate incubation with the mammal.
8. A method as in claim 1 wherein the level of an acetylated form of the non-spermine/spermidine SSAT substrate in the sample is correlated to a standard to determine the relative level of SSAT activity in the mammal.
9. A method as in claim 1 wherein the level of an acetylated form of the non-spermine/spermidine SSAT substrate level is assayed using gas chromatography.
10. A method for determining the activity of spermine/spermidine N¹-acetyltransferase (SSAT) in a mammal comprising the step of assaying a sample derived from the mammal for the level of an acetylated form of a non-diaminopropane substituted SSAT substrate in the sample.

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11. The use of a method as in claim 1 for correlating SSAT activity to pathological conditions in the ~~mammal~~ including gastric carcinoma, ovarian cancer, acute myelocytic leukemia, lymphoma, ~~breast cancer~~, renal cancer, colorectal cancer, or prostate cancer.

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